AMENDMENT TO THE SPECIFICATION:

Please replace paragraphs 0003 and 0004 with the following rewritten paragraphs:

[0003] Ultrasonic devices have also been used to identify occluded cranial vessels, and to treat vessel occlusion and hypoperfusion in the brain. When identifying cranial vessels using transcranial Doppler ultrasound (TCD), ultrasonic energy is transmitted from a transducer to brain tissue beneath a patient's skin, and sonic waves reflected from the patient's internal tissue ~~is~~are analyzed using the Doppler principle to determine a location of a cranial vessel.

[0004] When treating an occluded cranial vessel, an ultrasonic transducer is placed against a patient's skin, and ultrasonic energy is directed from the transducer to the occluded cranial vessel to dilate and recannalize the occluded vessel, thereby improving oxygen delivery to brain tissue. However, unlike a diagnostic session for vessel identification, which generally takes about 10 to 15 minutes to complete, an ultrasonic treatment session for treating vessel occlusion may take from 1 to 1.5 hours. Due to the prolonged application of ultrasonic energy, a patient may experience a burning sensation at the skin where the transducer is placed. The discomfort associated with the burning sensation can become so severe that the treatment session may be terminated and reinitiated after allowing the skin temperature to subside. In addition, the heat generated at the skin-transducer interface may cause tissue adjacent the skin to heat up, adversely impacting an effectiveness of the recannalization procedure.

Please replace the paragraph 0006 with the following rewritten paragraph:

[0006] In another embodiment, an apparatus for delivering acoustic energy to a tissue region includes a catheter having a transducer ~~is~~ secured to the catheter distal end and means for cooling the catheter distal end.

Please replace the paragraph 0017 with the following rewritten paragraph:

[0017] The harness 102 is configured to be placed at least partially around a patient's head. In the illustrated embodiment, the harness 102 includes a plurality of straps 118a-c forming a helmet. The straps 118a-c can be fixedly or slidably secured to each other, and can include adjustable and securing means, such as belt holes, fastening fabric or Velcro™, and snap fit connectors, for changing a shape of the harness 102 to accommodate different head sizes. The straps 118a-c can be made from a variety of materials, such as plastics, metals, alloys, and leather. Although only three straps 118a-c are shown, in alternative embodiments, the harness 102 can have fewer or more than three straps.

Please replace the paragraph 0019 with the following rewritten paragraph:

[0019] It should be noted that the manner in which the transducer device 104 is secured to the harness 102 should not be limited to the example discussed previously. In alternative embodiments, other securing mechanisms, such as a snap-fit connection, a clip, a fastening fabric or Velcro™, and a frictional connection, can also be used to detachably secure the transducer device 104 to the harness 102. Also, instead of the configuration

discussed previously, the transducer device 104 can be made rotatably adjustable using other attachment devices.

Please replace paragraphs 0025 - 0028 with the following rewritten paragraphs:

[0025] The controller 108 may control the amplitude, and therefore the intensity or power of the acoustic waves transmitted by the transducer 210. The controller 108 may also control a phase component of the drive signals to respective transducer elements of the transducer 210, e.g., to control a shape of a focal zone 116 generated by the transducer 210 and/or to move the focal zone 116 to a desired location. For example, the controller 108 may control the phase shift of the drive signals based upon a radial position of respective transducer elements of the transducer 210, e.g., to adjust a focal distance of the focal plane (i.e., the distance from the face of the transducer 210 to the center of the focal zone 116). In addition or alternatively, the controller 108 may control the phase shift of the drive signals based upon an angular position around the face of the transducer device 104, e.g., to adjust a shape of the focal zone 116, as is well known to those skilled in the art.

[0026] In the illustrated embodiment, the housing 200 has ~~an~~ channel 220 that is in fluid communication with the fluid source 130. The channel 220 is located circumferentially around the transducer 210 and is configured to circulate cooling fluid delivered from the fluid source 130. The fluid source 130 includes a cooling device (not shown), such as a heat exchanger, for cooling fluid stored therein, and a pump (also not shown) for pumping the fluid to the channel 220 via a first tube 132. The fluid travels through the channel 220,

providing cooling effect to a surface 226 located adjacent to the transducer 210, and returns to the fluid source via a second tube 134.

[0027] In the illustrated embodiment, the surface 226 is approximately in a same plane with the transducer 210 such that when the transducer 210 is placed on a patient's skin, the surface 226 is also in contact with the skin. An opposite side of the surface 226 is in fluid contact with the channel 220, thereby allowing fluid in the channel 220 to carry heat away from the surface 226. In the illustrated embodiment, the surface 226 is made from a metal, or other thermally conductive materials.

[0028] In some embodiments, the transducer device 104 can further include one or more acoustic energy sensors ~~(not shown)~~ 230 secured to the housing 200 for sensing acoustic energy or signal that has been reflected from an object, such as tissue. The sensed acoustic signal can be processed and/or analyzed to determine whether a vessel (e.g., an occluded vessel) has been located.

Please replace paragraphs 0039 and 0040 with the following rewritten paragraphs:

[0039] In some embodiments, the focused ultrasound device 400 can further include one or more acoustic energy sensors ~~(not shown)~~ 430 secured to the distal end 404 for sensing acoustic energy that has been reflected from an object, such as tissue. The sensed acoustic energy can be processed and/or analyzed to determine whether a vessel (e.g., an occluded vessel) has been identified, as similarly discussed previously.

[0040] When using the focused ultrasound device 400 to recannalize an occluded vessel, the distal end 404 is inserted into a patient, and the distal end 404 is distally advanced until it reaches a target site. Steering mechanisms known in the art can be

provided to steer the distal end 404. If the device 400 includes the acoustic energy sensor, it can be used to determine a location of the occluded vessel. In such case, the driver 106 drives the transducer 420 to deliver diagnostic acoustic energy, and acoustic energy reflected from an object is sensed by the sensor and is analyzed to determine if the object is associated with an occluded vessel.

Please replace paragraphs 0045 and 0046 with the following rewritten paragraphs:

[0045] FIG. 5 shows another focused ultrasound device 500 which includes a handle 502 and a transducer 504 secured to the handle 502. The handle 502 includes a channel 508 beneath a surface 510 that is located adjacent to the transducer 504, a first fluid delivery lumen 506, and a second fluid deliver lumen 507. The first fluid delivery lumen 506 is configured to deliver fluid from the fluid source 130 to the channel 508, and the second fluid delivery lumen 507 is configured to return the delivered fluid back to the fluid source 130. In the illustrated embodiment, the fluid delivery lumens 506, 507 are located within a wall of the handle 502. Alternatively, the fluid delivery lumens 506, 507 can be implemented using tubes that are placed within the ~~a~~ lumen of the handle 502.

[0046] In some embodiments, the focused ultrasound device 500 can further include one or more acoustic energy sensors ~~(not shown)~~ 530 secured to the handle 502 for sensing acoustic energy that has been reflected from an object, such as tissue. The sensed acoustic energy can be processed and/or analyzed to determine whether a vessel has been identified, as similarly discussed previously.